Venture Capital in Turbulent Times: The Great Bifurcation?

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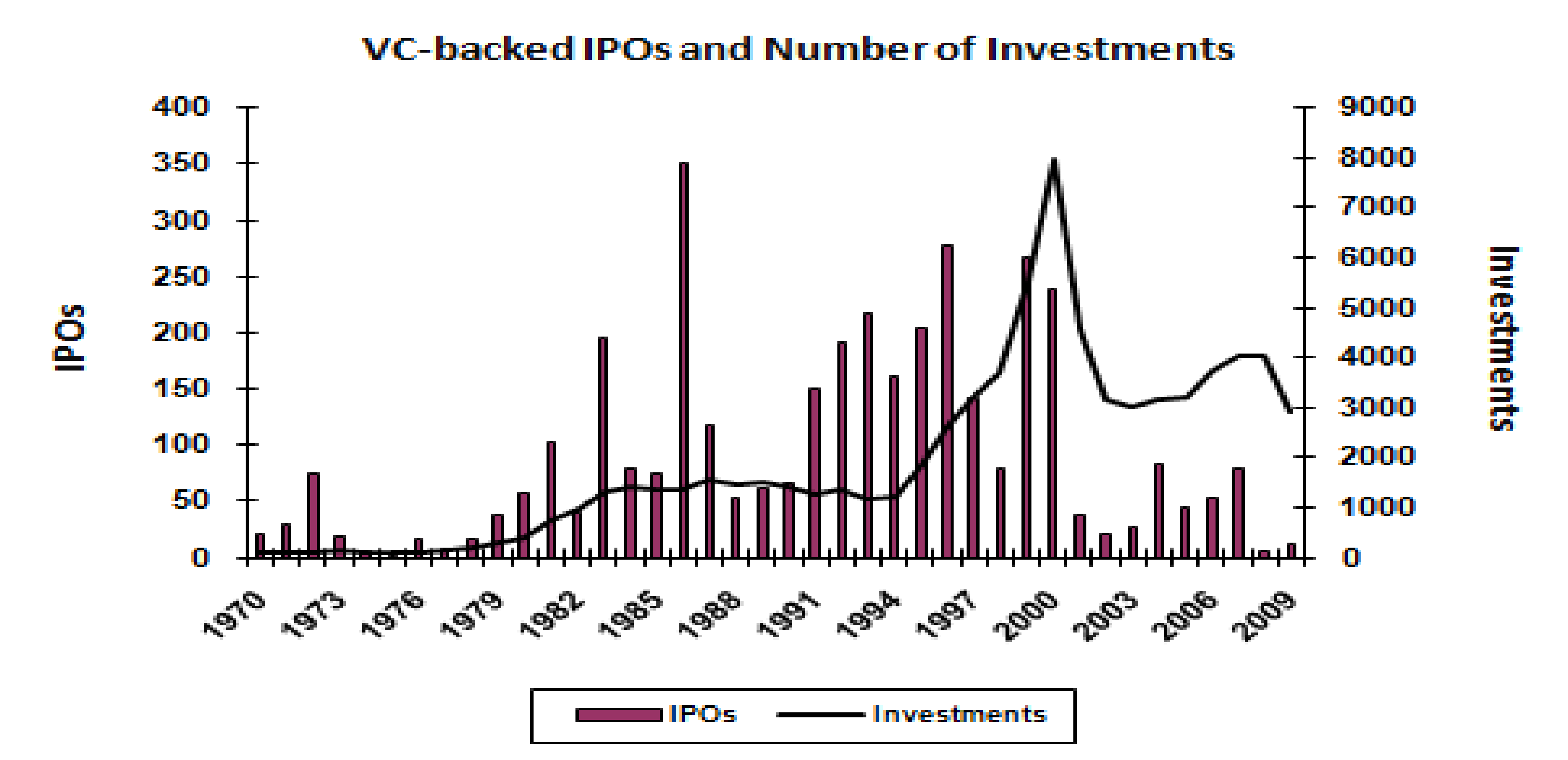
Recapping 2010

Four scenarios

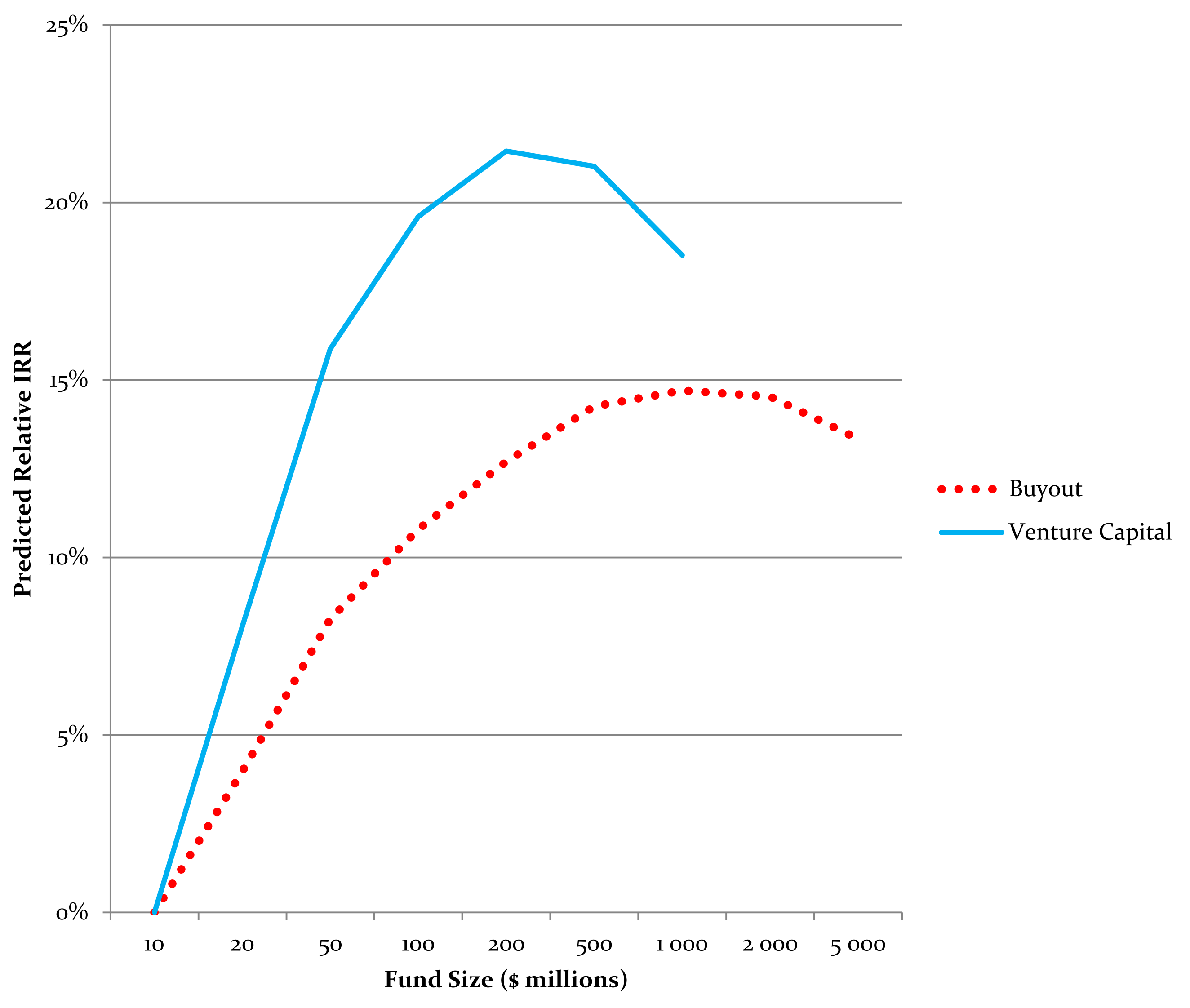
	Constant Investor Base	Turnover in Investor Base
"Fair" Returns	Recovery	Back to the Future
Disappointing Returns	A Broken Industry	The LPs' Desertion

IPOs and VC investments



Source: Gompers, Kovner, Lerner and Scharfstein [2008].

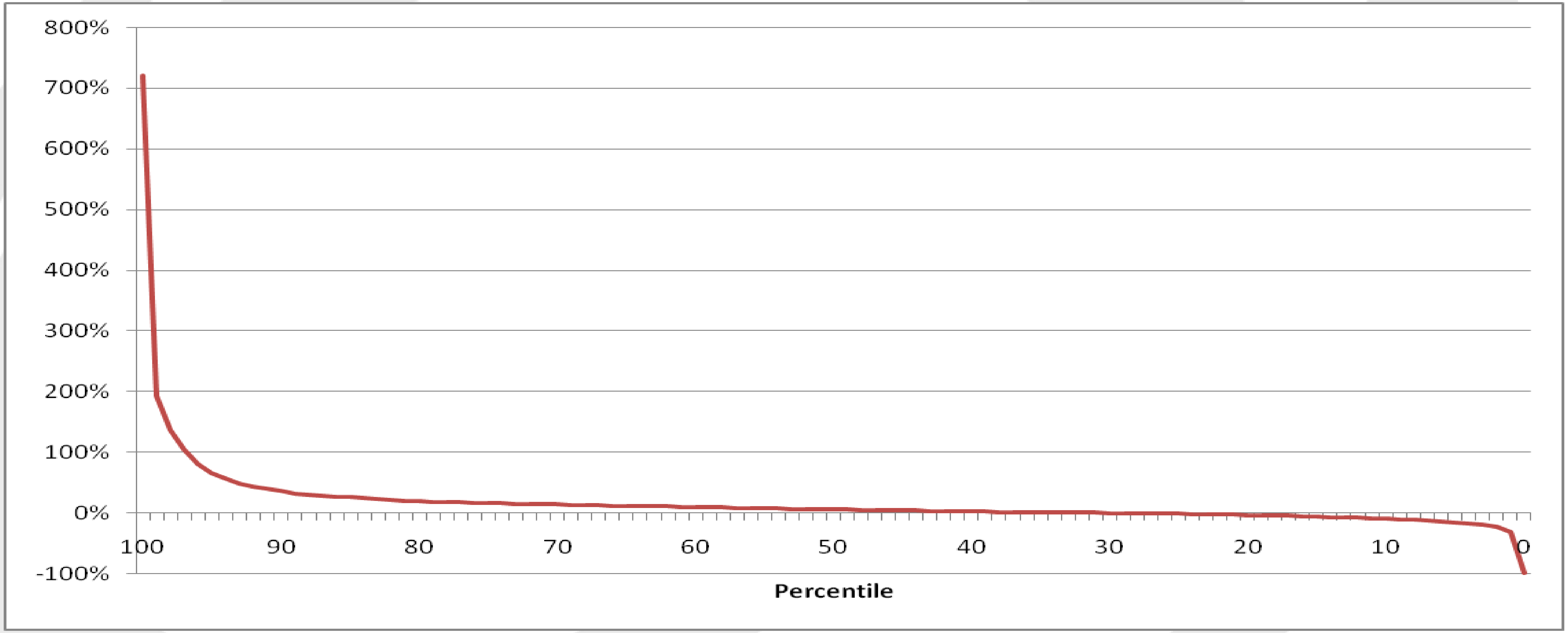
Funds became too large



- Funds do better as they get larger… to a point!
- Fund size is measured as capital committed at closing.
- Regression results control for vintage year effect, location, and fund category.

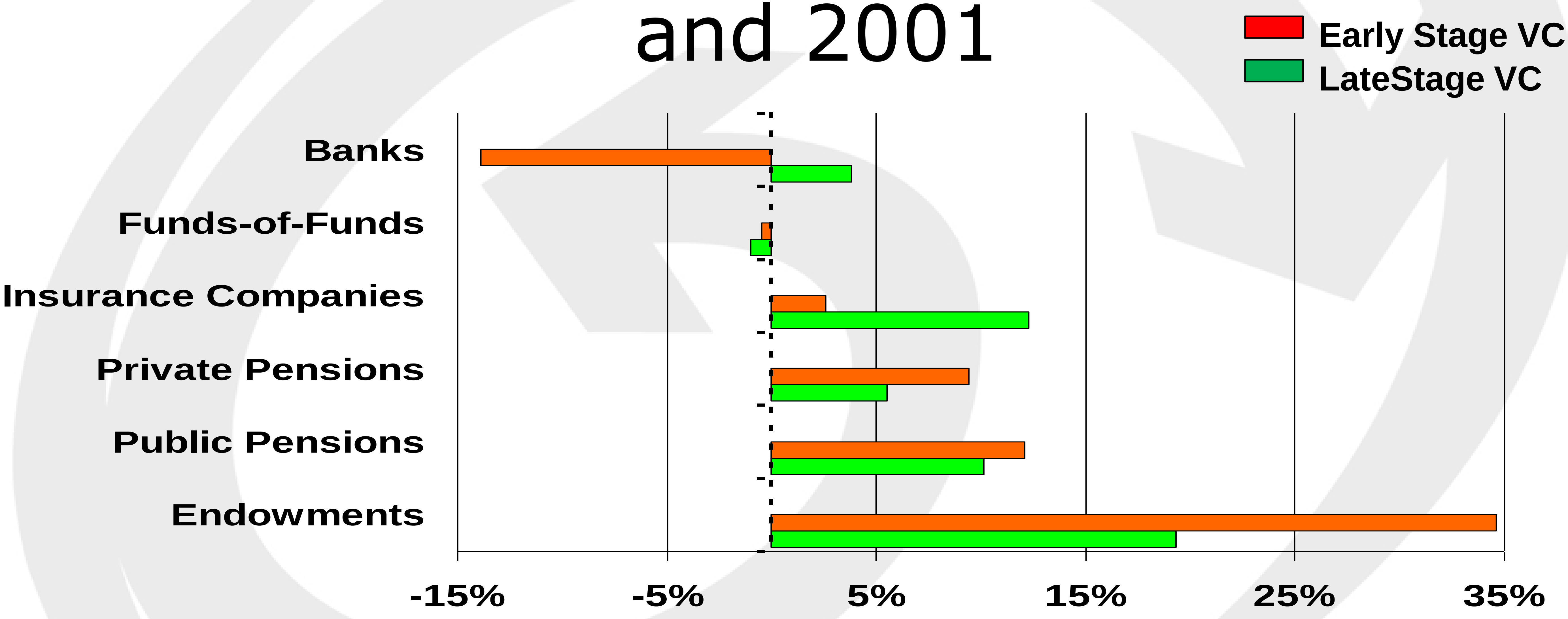
Source: Lerner, Leamon and Hardymon [2011]

Returns of U.S. venture funds



Returns from inception to 12/31/10.
Source: Authors' analysis of Thomson/Reuters data.

Performance by investor type, venture capital funds between 1992 and 2001



Source: Lerner, Schoar and Wongsunwai [2007]

Fees have driven sharp wedge between net and gross returns

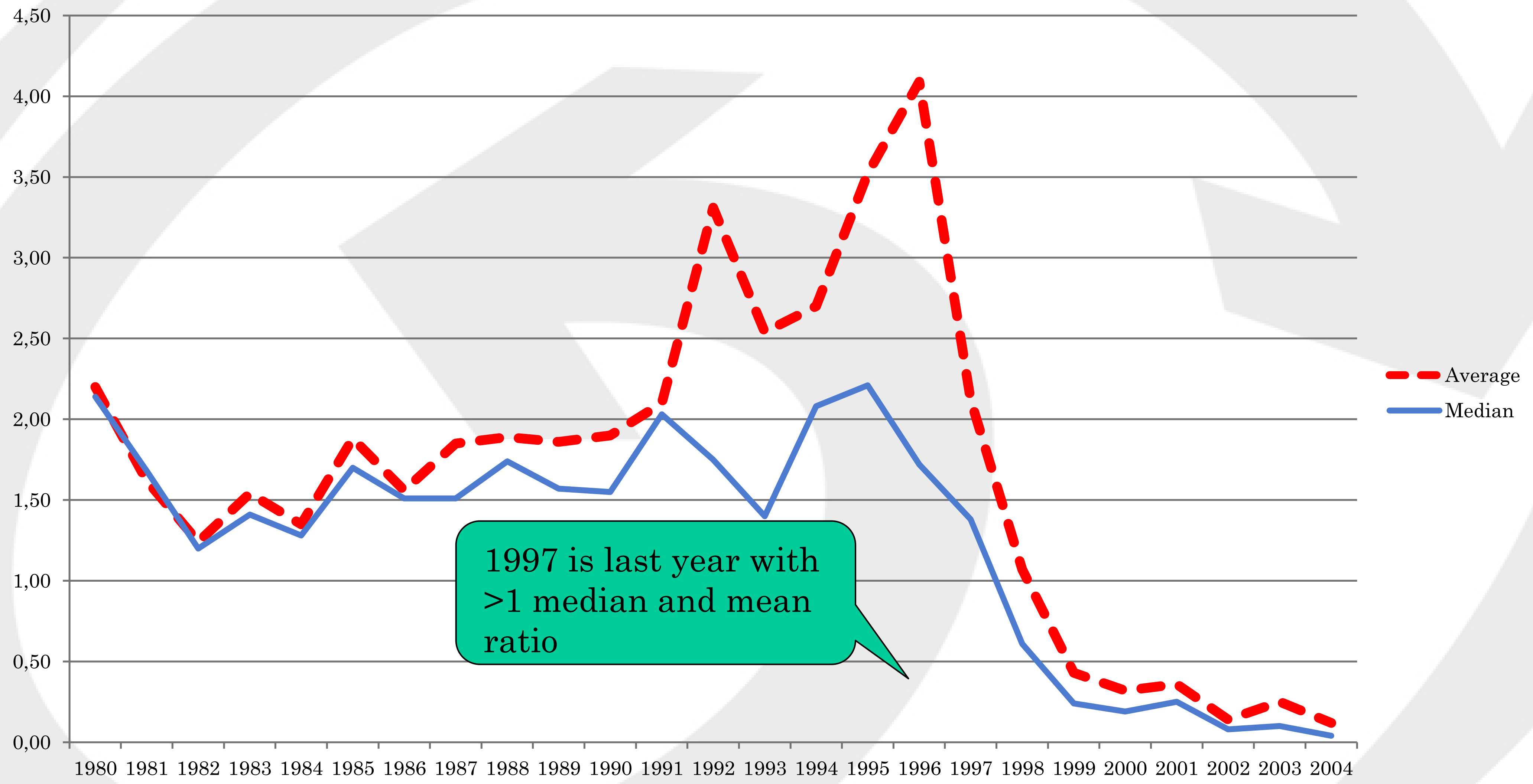
- Payments ***per partner per fund***, based on 240+ PE/VC partnerships ($MMs):

	VC	*LBO*
– Carried interest:	5.2	10.1
– Management fees	10.6	18.5
– Other fees:	1.3	4.1
– ***Total***	***17.1***	***32.7***

» Source: Metrick and Yasuda [2009]

For average PE/VC firm
fees are 70% of compensation!!!

Distributed/paid-in capital, by vintage year, U.S. VC funds



Source: Thomson/Reuters. Data as of 12/31/10.

Today's questions

- What has happened to the venture market on the ensuing year?
  - *Trend 1—Venture is still alive but fundraising is on everyone's mind*
  - *Trend 2—The great bifurcation.*

- What are broader implications for policymakers?
  - Refocusing government programs
  - The importance of environmental factors!

What is the situation in the venture market now?

- Lots of gloom and doom over past few years.
- Claims that venture model is broken.
- Does the evidence support?

- "Dramatic inflows of cash weaken the 'fragile ecosystem' of the venture capital industry by forcing some to 'shove' money into deals… The answer is discourage more money from coming in."

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    - *Venture Capital Journal*, December 1993
        - ✓ Capital-weighted average IRR of contemporaneously-formed funds: ***30.7%***.

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    - *Venture Capital Journal*, July 1980
        - ✓ Capital-weighted average IRR of contemporaneously-formed funds: ***22.3%***.

- "Can money be made in the SBIC field? This is a question on which there has been a great deal of soul searching by many an SBIC board, sponsors of the SBICs and investors. So far the answer seems to be a clear cut: yes and no… [Many] SBICs as they are now constituted just don't look as though they can recover their losses… The weaker companies not able to obtain adequate personnel, insufficiently financed, or otherwise indisposed should be merged, liquidated, or exported."

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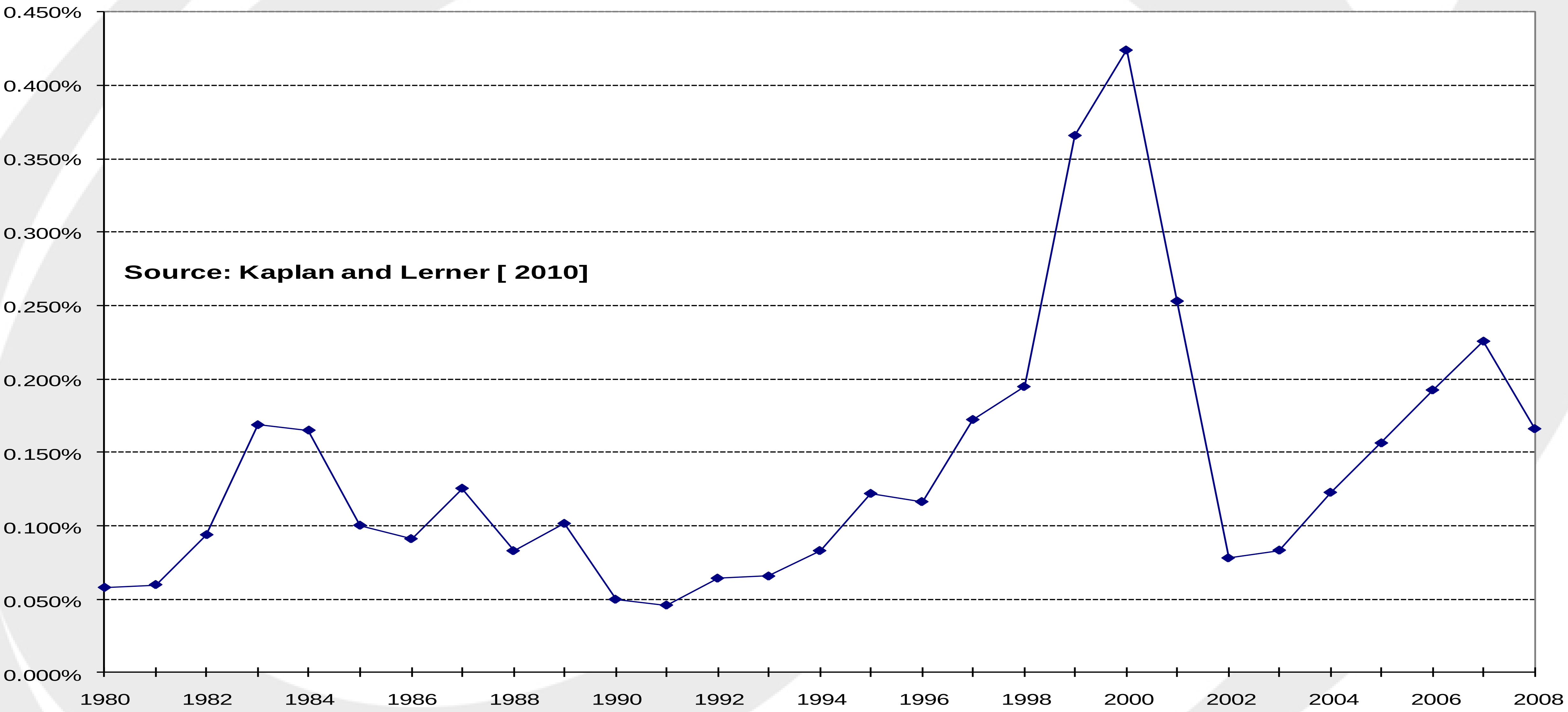
    - *SBIC Evaluation Service* (*VCJ*'s predecessor), October 1965
        - Capital-weighted average IRR of contemporaneously-formed funds: Little data but likely to be quite large!

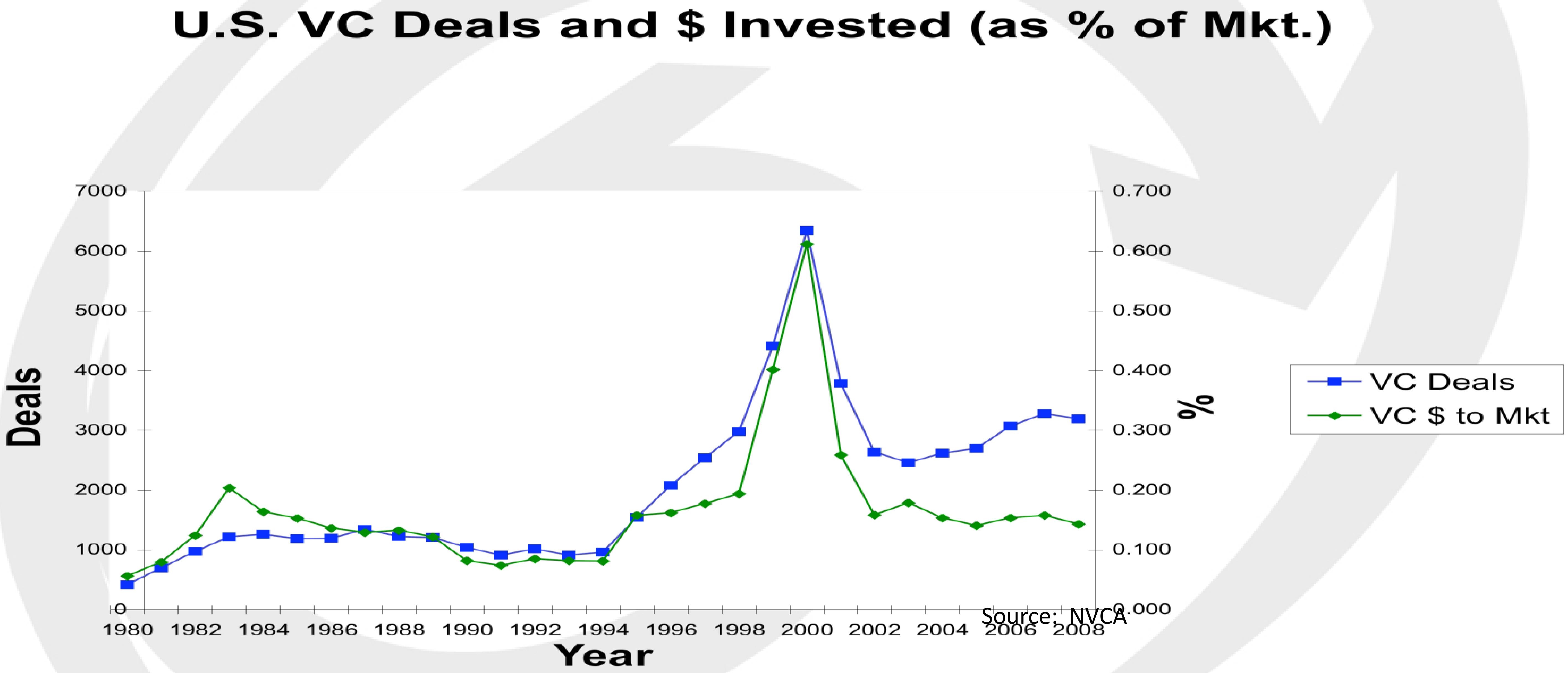
Commitments to VC funds as a % of equity market capitalization



Fundraising

- Commitments to VC as a % of overall stock market has been much more stable than is commonly appreciated.
  - Usually between 0.10% and 0.20% of total stock market.
  - Big outliers were 1999 to 2001.
  - 2006 to 2007 on higher side, but not particularly unusual.
  - 2008 right in the middle.
    - And, suspect that more funds classified as VC also include growth equity relative to the past.

Deals and $ (as a % of stock market)

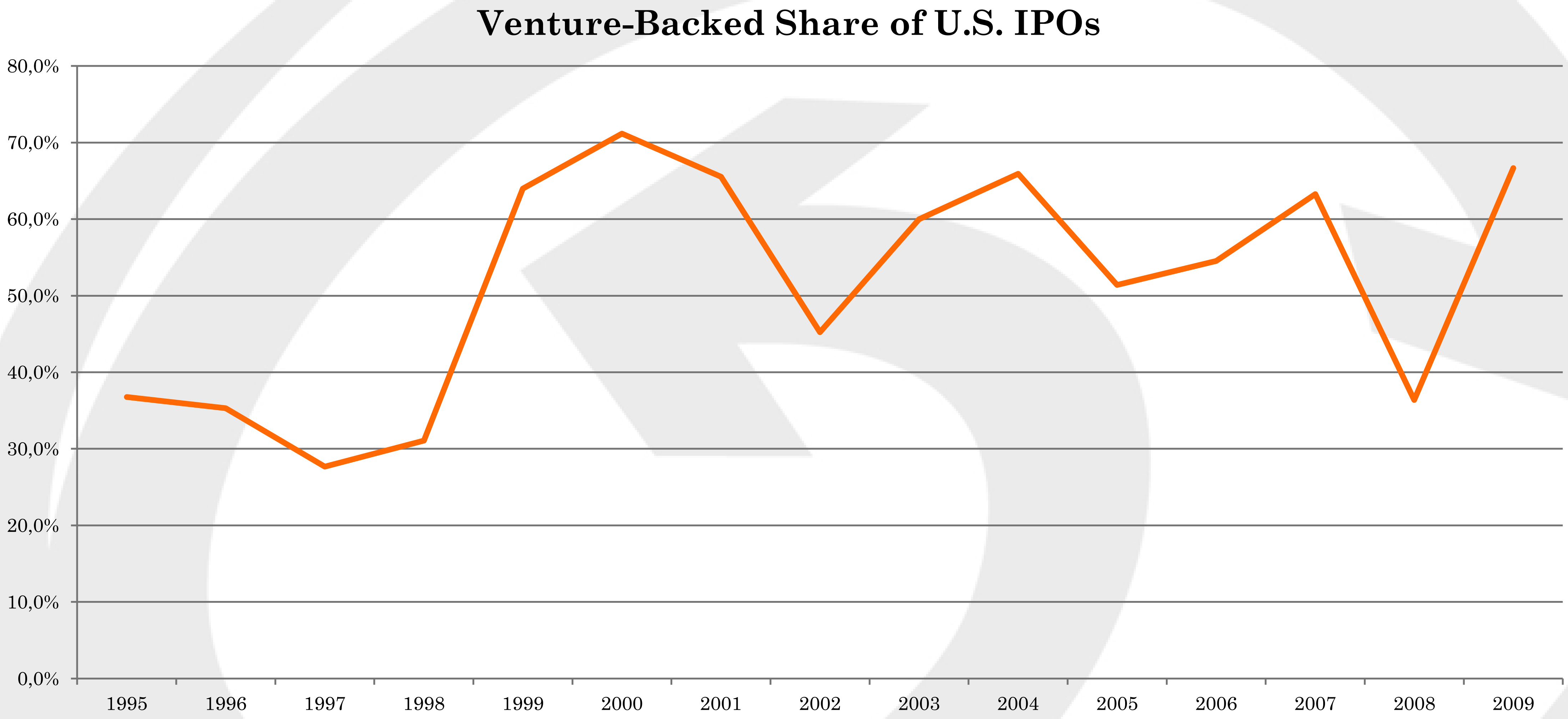


Source: NVCA

Transaction volume

- Dollars invested in VC deals also have been relatively constant as a percentage of the total stock market since 1980s.
  - Between 0.1% and 0.2%.
    - Has been running at 0.15% of total stock market since 2002.
  - 1999 to 2001 are the big exceptions / outliers.

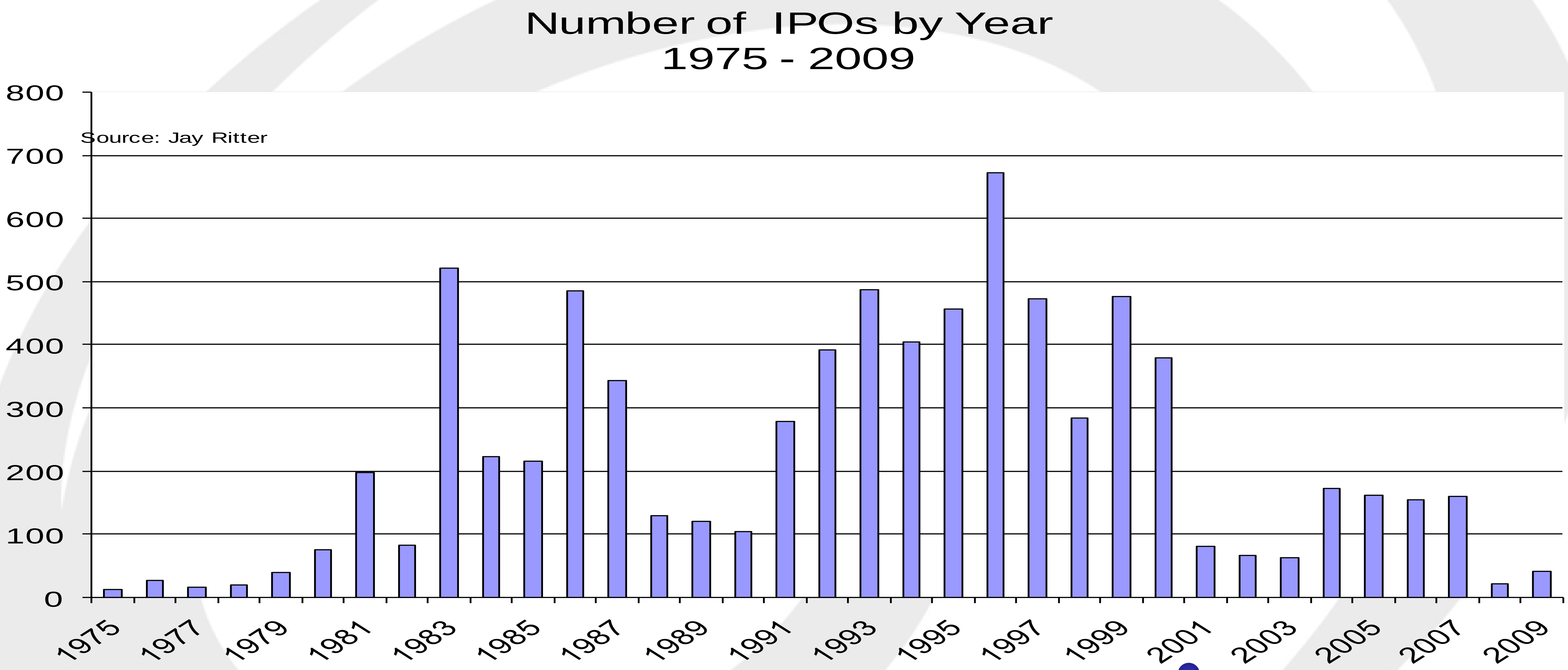
Venture capital share of IPOs



Reports share of all non-financial, non-reverse LBO, non-REIT, non-SPAC IPOs that are venture-backed. 2009 data is through 7/31/2009.

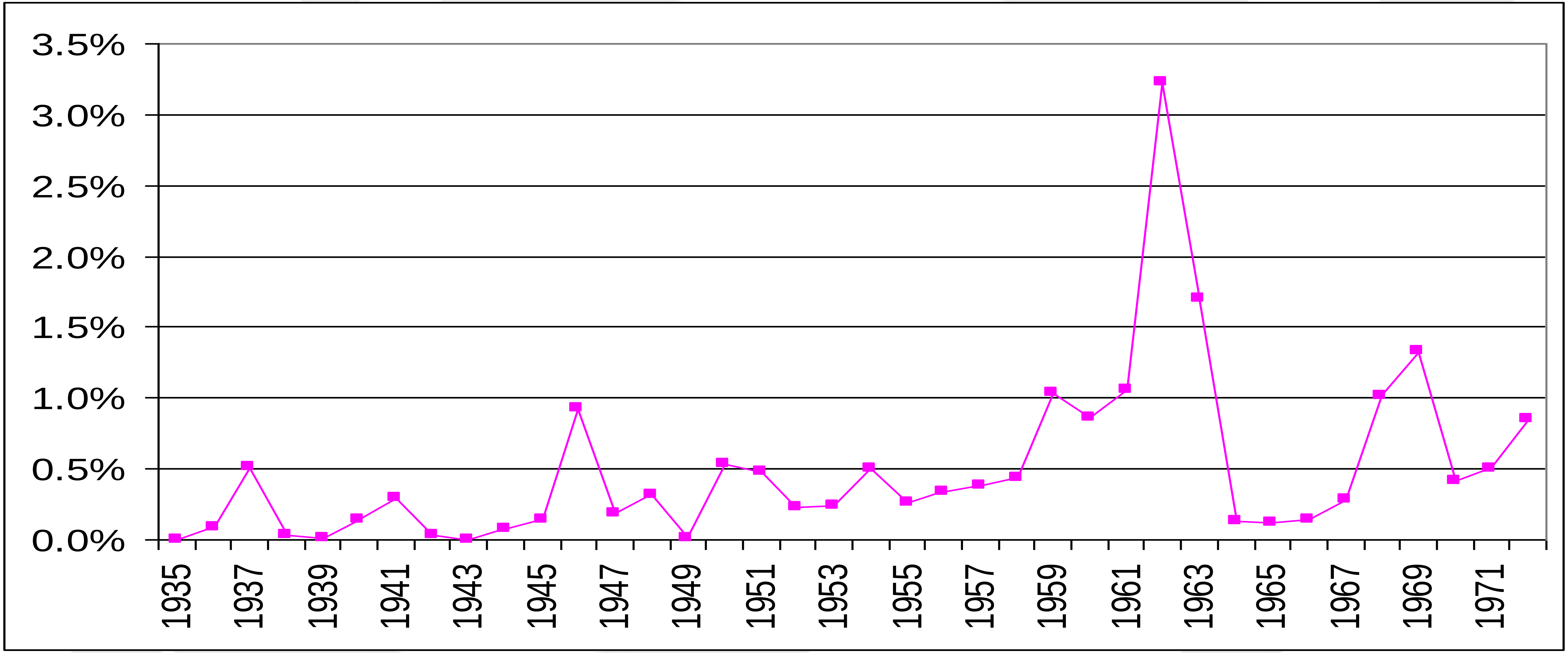
Source: Kaplan and Lerner [2010].

Have IPOs disappeared?



Our first panel will make a deep-dive into the role of IPO markets

Historical IPOs as a share of public market capitalization



Source: Gompers and Lerner [2003].

Venture capital share of IPOs

- Volume of IPOs down sharply.
- But venture capital share greater than ever…
- And, historically, dramatic cycles.

Fund returns

- Public market equivalents:
  - Relative performance of public and private markets…
    - PME >1 implies net performance well above S&P 500.
    - PME<1 implies underperformance.
- Weighted average performance of venture funds in Kaplan and Schoar [2005]:
  - Average PME = 1.22.
    - Implies net performance well above S&P 500
  - But does not include recent crisis!

What about more recent vintages?

- Caveats:
  - Do not have full cash flows.
  - Do not know how much funds are marked to market.
  - Cannot be certain of the analysis that follows.

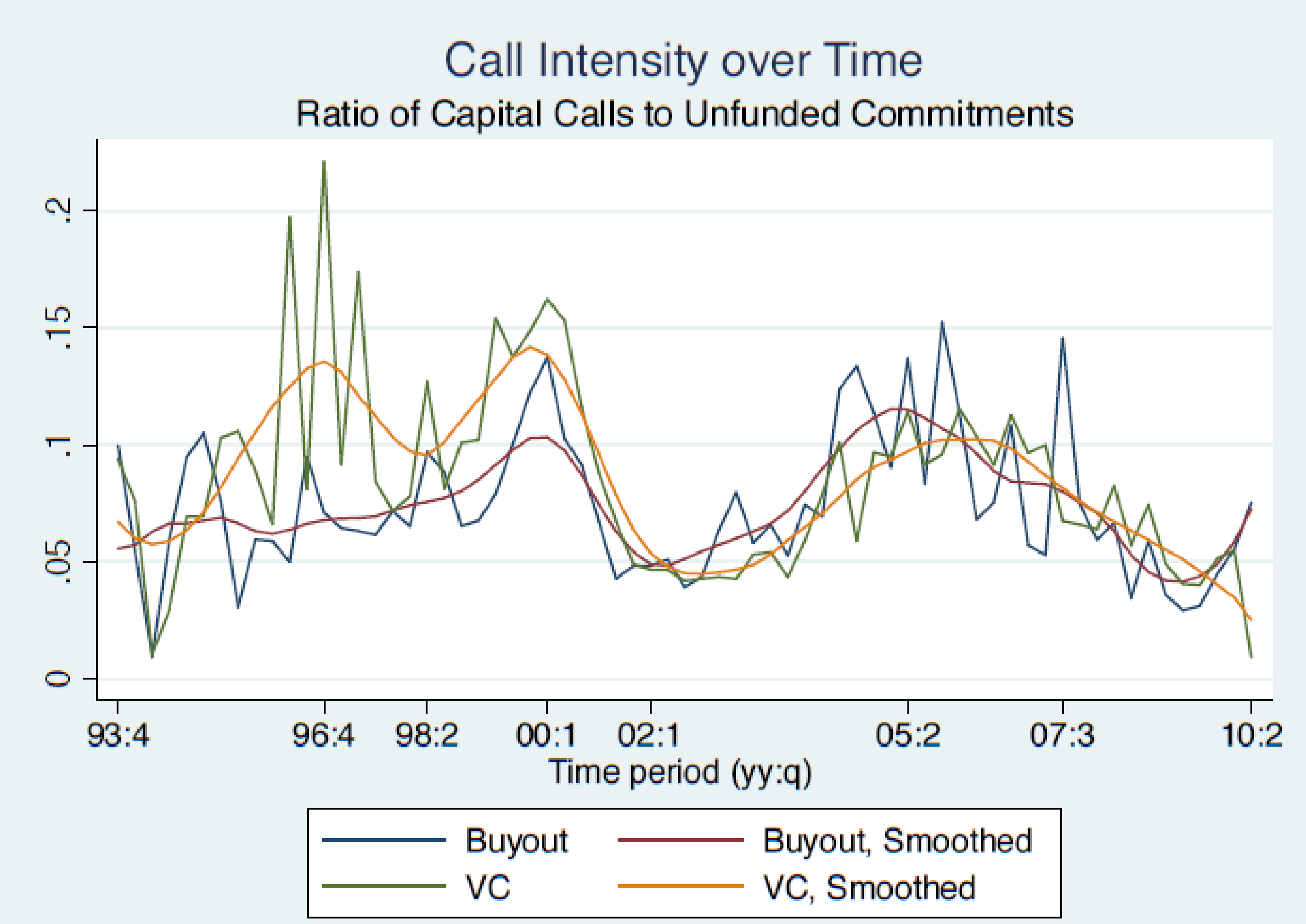
- That said, can look at recent vintages compared to stock market:
  - Vintage year IRR less 5-year IRR of stock market (total return).

Outperformance… even in recent periods

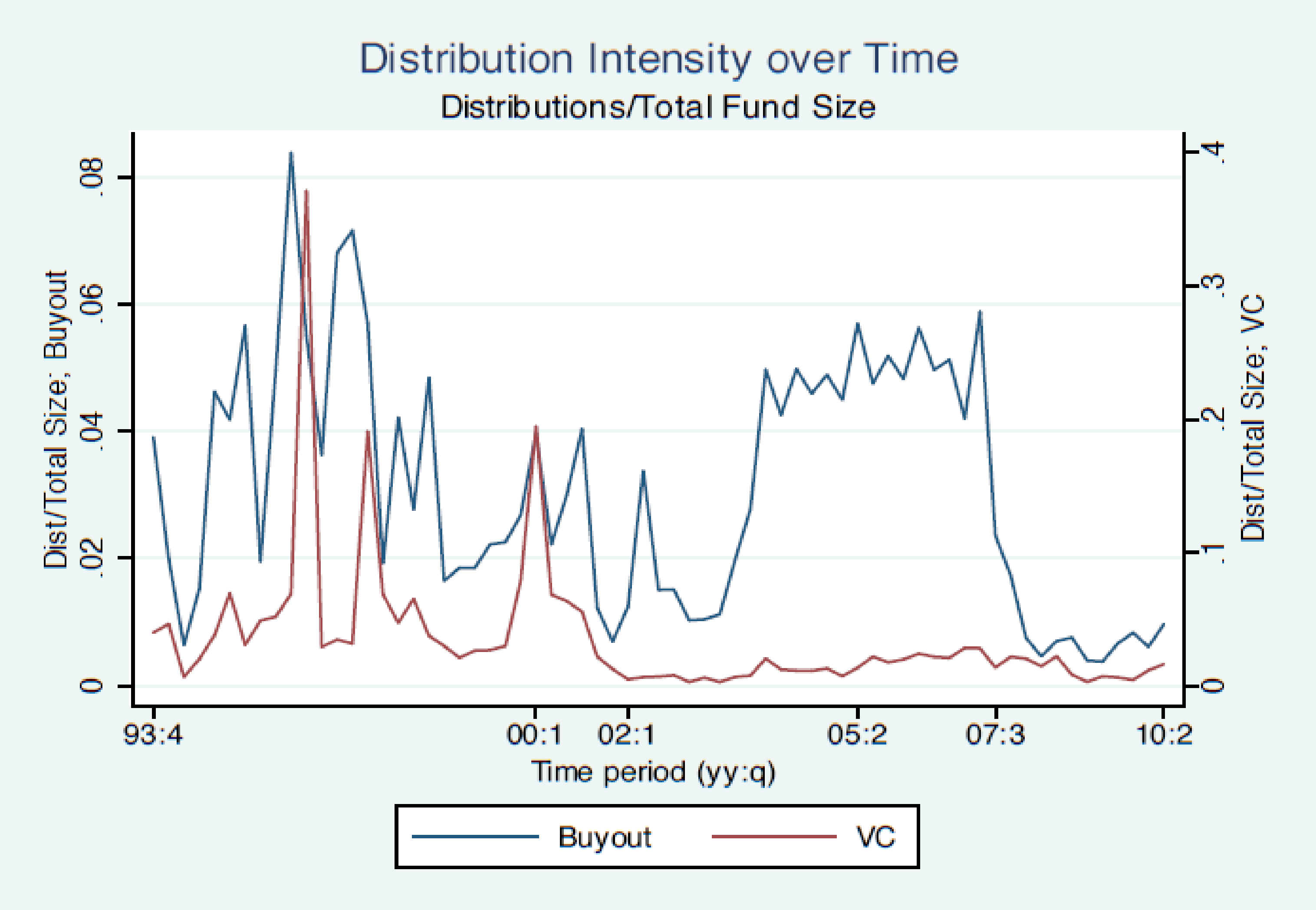
Another recent look at performance by Robinson Sensoy 2011

Sample:	Buyout Funds Full (N=542)	Buyout Funds Liquidated (N=368)	Venture Capital Funds Full (N=295)	Venture Capital Funds Liquidated (N=192)
IRR:				
Mean	0.09	0.12	0.08	0.09
Median	0.09	0.10	0.01	0.02
St. Dev.	0.26	0.28	0.43	0.47
25^{th} %ile	-0.02	-0.01	-0.09	-0.08
75^{th} %ile	0.19	0.22	0.13	0.16
TVPI:				
Mean	1.51	1.57	1.38	1.44
Median	1.36	1.45	1.03	1.05
St. Dev.	0.86	0.80	1.45	1.33
25^{th} %ile	0.95	0.99	0.68	0.72
75^{th} %ile	1.84	1.90	1.51	1.65
S&P PME:				
Mean	1.19	1.18	1.06	1.03
Median	1.09	1.09	0.84	0.82
St. Dev.	0.61	0.56	1.15	0.95
25^{th} %ile	0.82	0.82	0.55	0.52
75^{th} %ile	1.46	1.46	1.21	1.13
Tailored PME:				
Mean	1.08	1.10	1.09	1.06
Median	0.96	1.00	0.85	0.83
St. Dev.	0.64	0.65	1.16	0.94
25^{th} %ile	0.74	0.77	0.56	0.54
75^{th} %ile	1.30	1.37	1.28	1.18

Cyclical movements of calls and distributions



Source: Robinson and Sensoy [2011].



Calls, distributions and net cash flows of VC and buyout firms are all pro-cyclical!

Overall return evidence

- IRRs and PMEs vary substantially across vintage years.
- VC funds' weighted average PMEs well above one.
- Recent vintages are holding their own relative to the overall stock market.

Looking forward

- Declining fundraising is historically associated with <u>higher</u> returns:
  - Vintage IRR = 28% - 41 x Capital Committed in last 2 yrs as % mkt.
  - No reason to suspect same effect not at work this time.

- Shift in corporate R&D spending towards "open innovation" models should create opportunities for exits via acquisitions.

- Some reasons to think IPO market will be more robust going forward:
  - More boutique investment banks with incentives to market IPOs
  - Sarbanes-Oxley more manageable than earlier.

The great bifurcation

- Traditionally venture capital was informal “craft” business.
- Many recent developments have changed this:
  - Shifting mixture of investors.
  - Growth of intermediation.
  - Perceived need for international business models.
  - Changing nature of technology needed to build firms.
- What are consequences?

On the one hand, groups going big…

- Sequoia Capital between 2007 and 2010 raised seven separate funds totaling over $4.25 billion:
  - Both to early- and late-stage investments
  - Targeting specific geographies such as China, India, and Israel
- Bessemer Venture Partners raised $1.6 billion fund in 2011:
  - Largely driven by success in India investments
- Big groups universally characterized by diverse portfolios and global outlook.

And others going (deliberately) small…

- Super angel funds, angel groups, enhanced incubators…
  - Argue small size gives them a kind of flexibility and focus.

- Mike Maples raised only $84 million for his second Floodgate Fund despite having terrific success with his first fund:
  - Twitter, the text-book rental firm Chegg, and iPhone game developer Ngmoco, which was acquired in 2010 for $400 million

- *"If you want to know a fund's strategy, you have to ask one and only one question: How big is your fund? … What ends up happening is that the size of the fund dictates all the decision-making. People say you can do super-early and super-late stage investing at the same time, but the fact of the matter is that you spend most of your attention where the money goes. We are not a small fund so that we can become a big fund."*

A precursor?

- Investment banking underwent a profound shift in the 1960s and 1970s.
- Triggered by tremendous growth in industry.
- Led to disruption of established order.
- Led to increasing differentiation of bulge bracket firms.

Increasing differentiation

- Ratio of underwriting volume of top bank to 20th bank ~15X at end of 1970s.

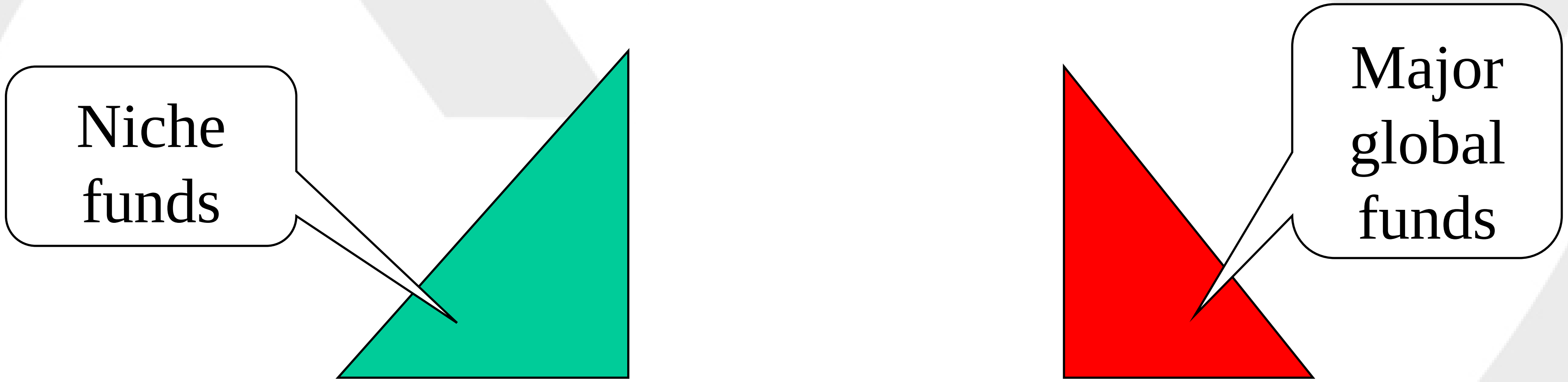
- Even greater changes in relative:
  - Structure: Partnerships disappeared
  - Investment professionals.
  - Net income.
  - Scale of activity.
  - Systematization of procedures.

– Boutique firms continued to thrive, but many mid-sized groups were acquired or dissolved.

One possible end-game

- Emergence of truly global venture capital players.
- Robust “fringe” of niche players with well-defined strategies.
- Suggests greatest problems in middle-tier groups without clear specialization.

Likely market scenario



Firm strategies in a bifurcated world

Specialists by industry, stage, geography
or business models

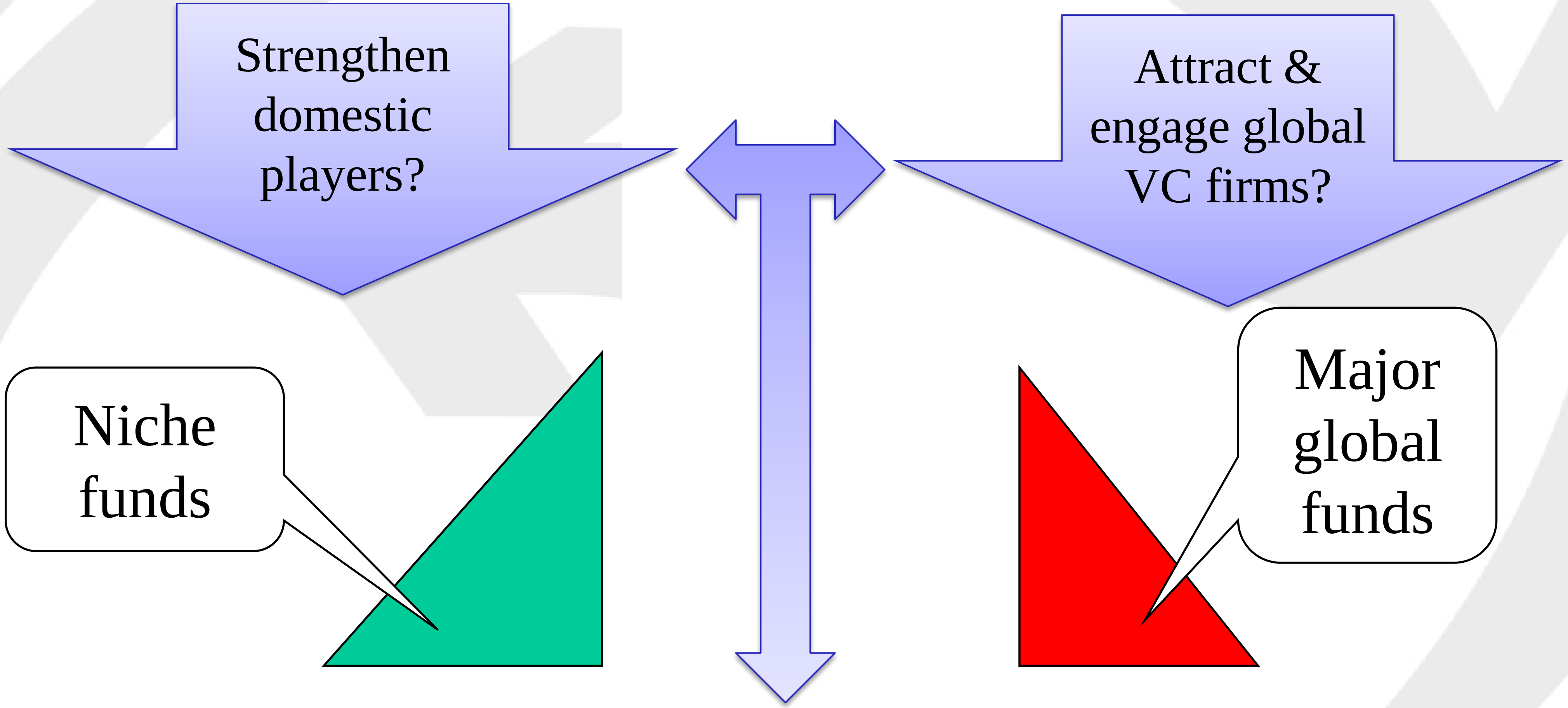
Generalists or
multi-segment specialists across industries, stages and geographies

Niche funds

Major global funds

WHAT ROLE OF GOVERNMENT IN A CHANGING VENTURE CAPITAL MARKET?

What can governments do to support and revive their VC industry?



Strengthen fundamental environmental factors that allow VC industry to flourish

Rethinking government policy: supporting specialists

- Specialists have variety of organizational forms
  - Support of angel investors (last year's case study)
  - New wave of incubators (verdict is still out)
  - Corporations are re-engaging with alternative venture capital models

Our second panel will look at alternative funding models, focusing on new approaches to corporate venture capital

Rethinking government policy: supporting specialists

- Specialists have variety of organizational forms
  - Support of angel investors (last year's case study)
  - New wave of incubators and university tech transfer offices
  - Corporations are re-engaging with alternative venture capital models
- Specialists don't fit easily into narrow government jurisdictions
  - Rise of industry-focused VC firms (e.g., cleantech)
  - Rise of "cross border funds"
  - Syndication networks transcend national boundaries
- Are government program rules outdated?
  - Most government programs impose strict geographic conditions
  - State/province-level programs impose even tighter restrictions

Rethinking government support: attracting global funds

- Most global funds based in US, maybe UK
- Global funds move in and out of countries
- One government strategy is to attract specific expertise
  - Some successes (e.g., Yozma)
  - Global funds may leave when subsidies stop
  - Ability to pick winners?
- Another governments strategy is to focus on fundamentals
  - Create eco-system that attracts global funds without specific subsidies

Strengthening the fundamentals

- Legal and financial environment
- Public pension funds
- Taxation
- Labor mobility
- Role of government-sponsored VC

Legal and financial environment

- Legal framework Large literature demonstrates correlation between financial development and legal quality indices:
  - Legal enforcement
  - Minority shareholder protection
- Stock market development
  - Availability of 2^{nd} tier markets
  - Listing and disclosure requirements

Our business case study on CHINEXT will look in detail the challenges of creating VC-friendly stock market

The role of public pension funds

- US VC flourished after ERISA prudent man ruling (1979)
- Large cross-country differences in pension systems
- PEVC Investments and performance of public pension funds

Do LPs overinvest in local economy?

- Recent US evidence (Hochberg Rauh 2011)

Does LPs size matter?

- Recent global evidence (Dyck and Pomorski 2011)

Overinvestment for in-state PEVC

	In-state Investment	Benchmark State Share
All	17.8%	9.9%
Buyout	15.0%	9.8%
Venture	25.1%	13.0%
Public Pension Funds	20.1%	10.6%
Private Pension Funds	17.6%	11.3%
Endowments	13.0%	10.1%
Foundations	14.1%	10.5%

Source: Hochberg and Rauh 2011.

Underperformance of in-state investments

Figure 2: Performance of In-State and Out-of-State Investments in Terms of Net IRR Minus the State-Vintage Mean, by LP Type
This figure presents the performance of in-state and out-of-state investments in terms of net IRR minus the state-vintage mean, by LP type. T-statistics of statistical tests for the equality of in-state versus out of state performance are presented at the bottom of the figure, as in the right panel of Table 8.

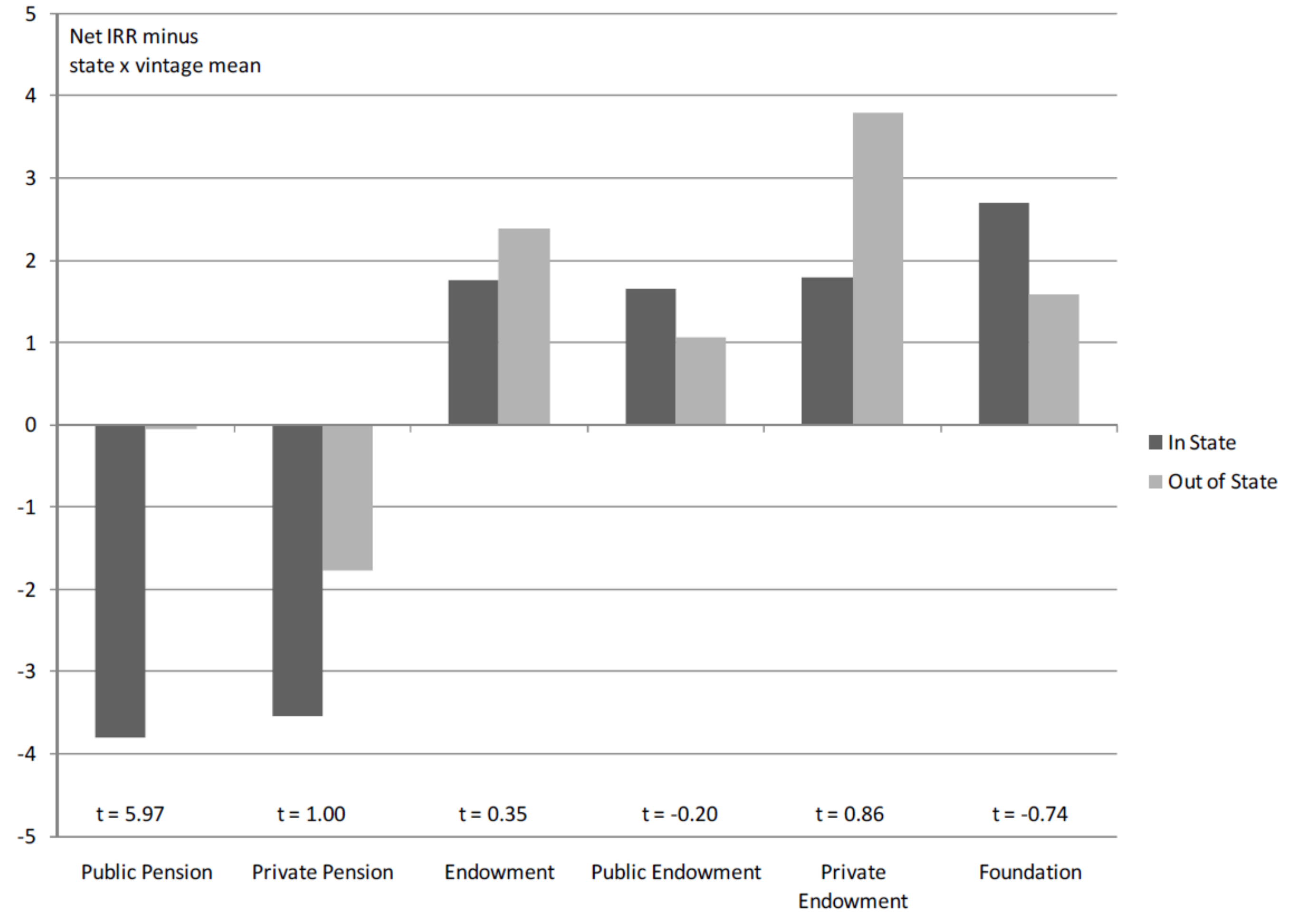
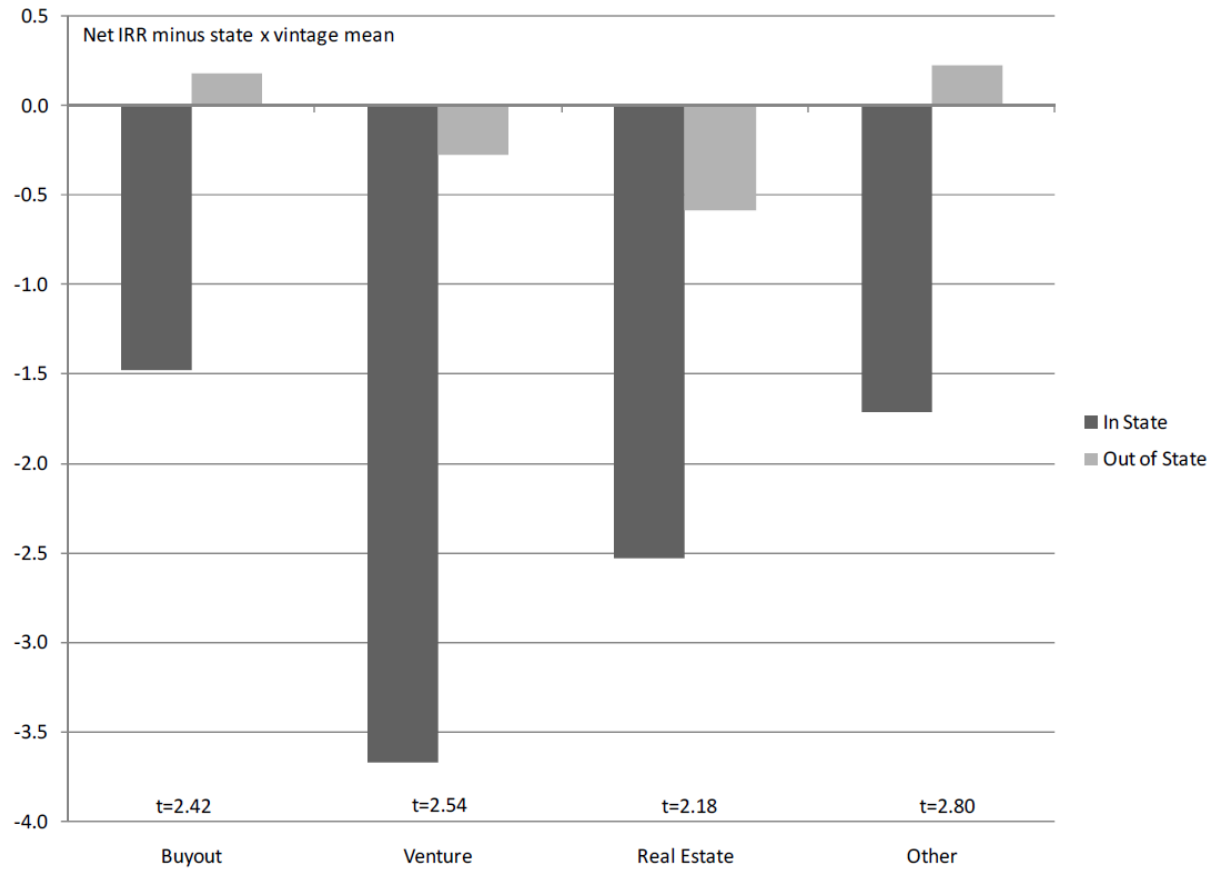
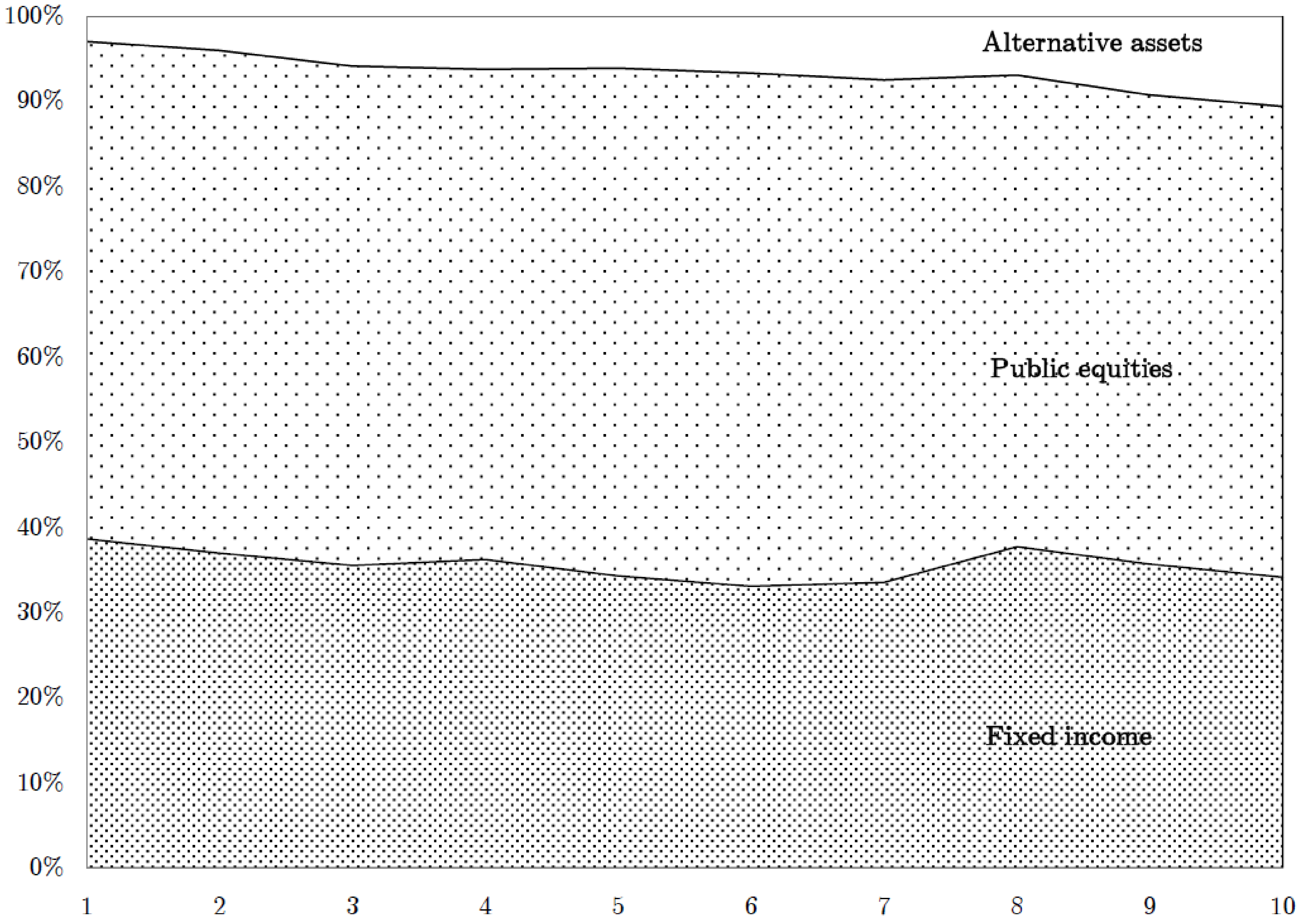


Figure 4: Underperformance of In-State Public Pension PE Investments by Category
The graph shows the relative performance of public pension PE investments in-state versus out-of-state by category, with a t-statistic for whether the performance is equal. Performance is measured as net IRR minus the mean of all other investments in the same vintage and GP state. T-statistics of statistical tests for the equality of in-state versus out of state performance are presented at the bottom of the figure.



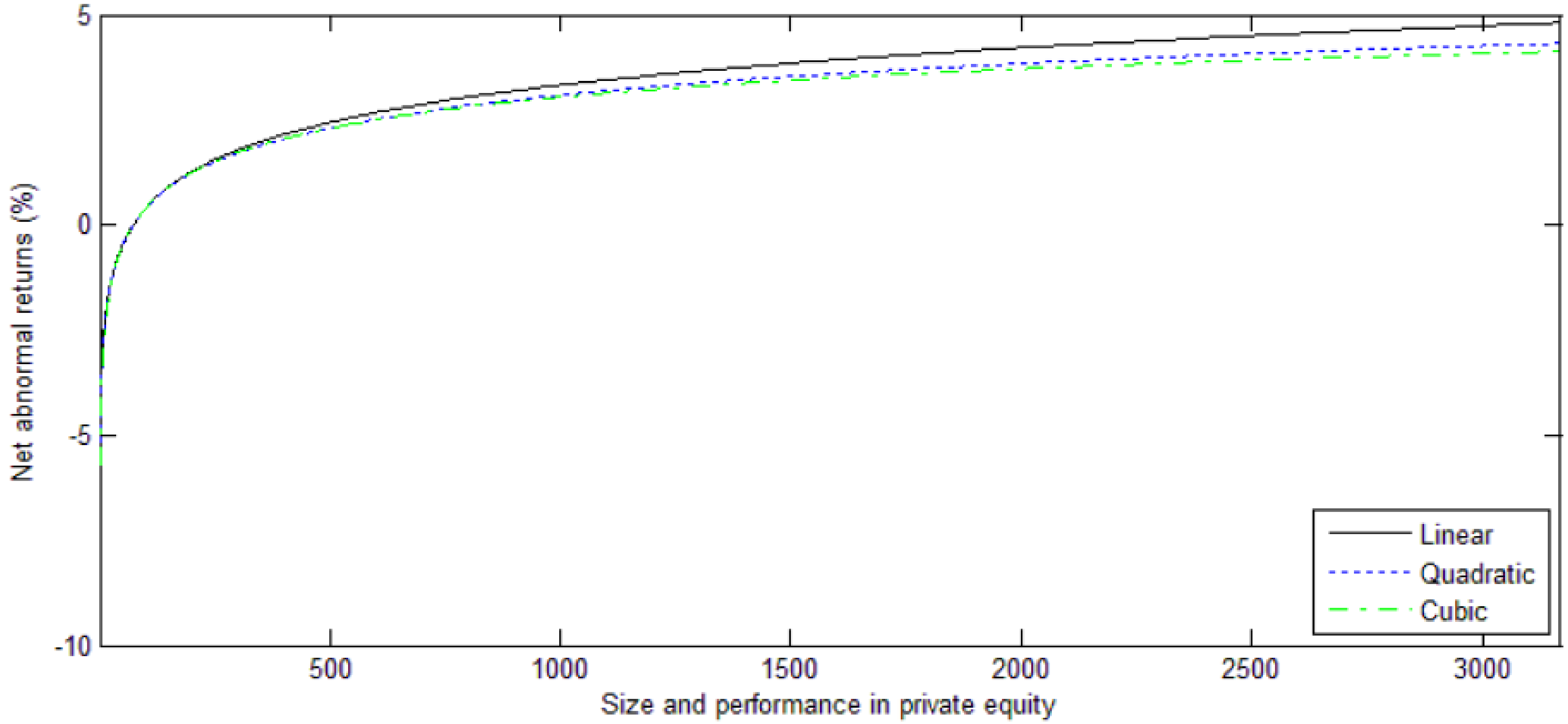
Source: Hochberg and Rauh 2011.

Larger LPs investment a larger % of portfolio into alternative assets



Source: Dyck and Pomorski 2011.

Larger LPs achieve higher abnormal returns in PE



Source: Dyck and Pomorski 2011.

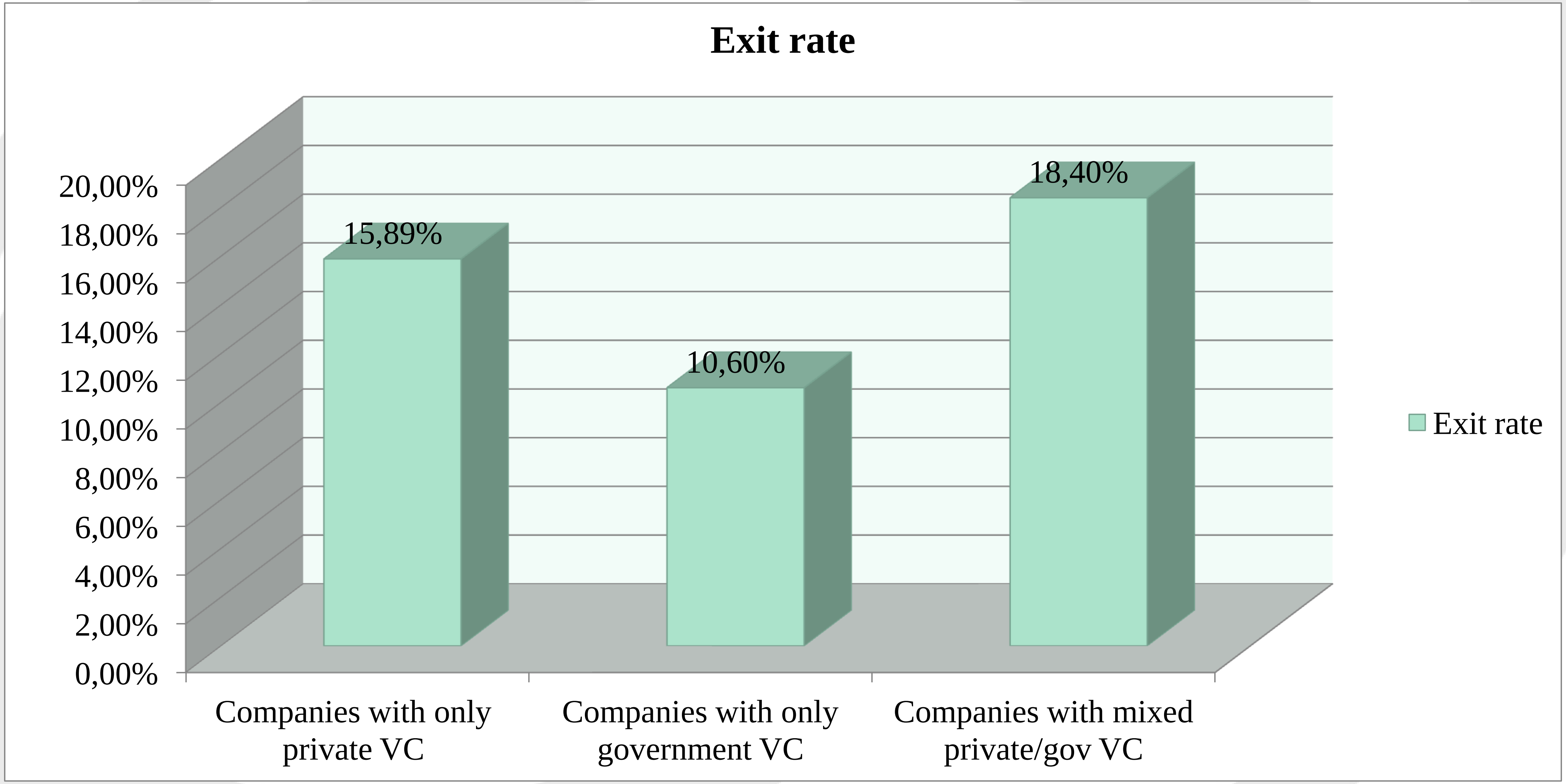
Taxation

- Capital gains taxation
  - Supply-side effect limited when LPs tax-exempt
  - Demand-side effect can be substantial
    - US rate reduction in 80s & 90s increased VC (Gompers and Lerner 1998)
    - Differential between income and capital gain tax matters in European data (Da Rin et al. 2006)
- How important is taxation of GP's carried interest?
  - GP/LP contract terms adjust more flexibly to market conditions than previously believed (Robinson & Sensoy 2011)

Labor mobility

- Affects decision to start-up & ability to hire and fire employees
- Cross-country differences
  - Countries with high employment protection have less VC
  - Countries that replace protection with insurance have more VC
  - (Source: Bozkaya & Kerr (2011))
- Within US, states that have loose enforcement of non-competes
  - more start-ups
  - attract more star innovators
  - effects appear to be causal
  - (Sources: Marx, Singh & Fleming (2011), Stuart & Sorenson (2003))

Performance of government-sponsored VC funds



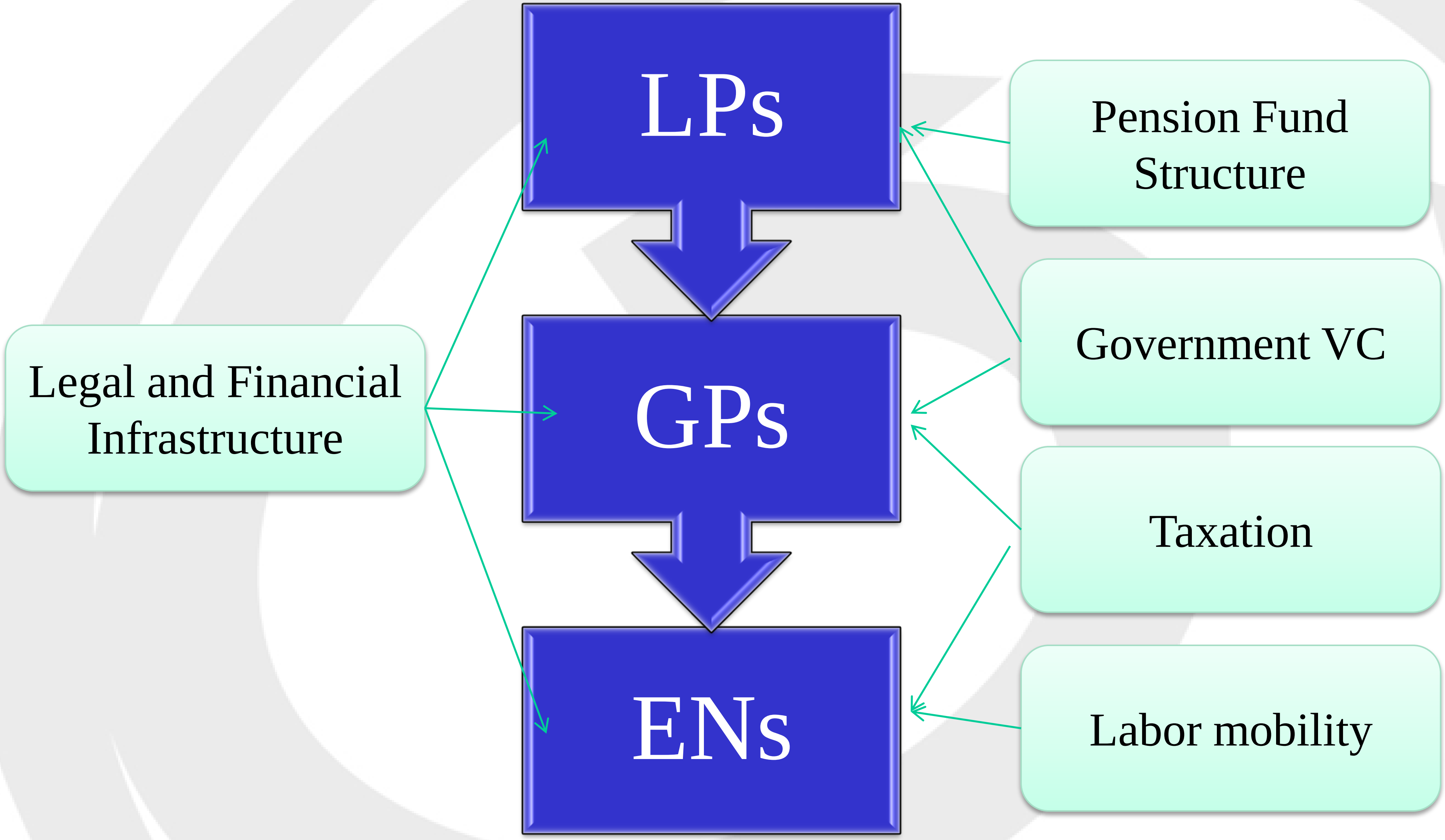
Source: Brander Du Hellmann 2011.

Do GVCs crowd out private VC?

- Unit of analysis = Country-Industry-Year
- Are higher GVC investments associated with lower PVC investments?
  - Same year effect: Strong positive relationship between GVC and PVC
  - Short term effect (1 year lag): No significant relationship
  - Long term effect (early 2000s vs. late 2000s): No significant relationship
- Same pattern for relationship between GVC investments and PVC performance (exit rates)
- **Evidence does not support the crowding out hypothesis!**
  - Caveat: Cross-country evidence; some countries may be exceptions

Source: Brander Du Hellmann 2011.

How do the various government policies interact to create a supportive environment?



Our panel on Singapore will illustrate the role of the eco-system

Thank you